

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed March 13, 2009. The Examiner is thanked for the thorough examination of the present application and the indication that claim 19 embodies allowable subject matter. In response, Applicant submits the foregoing amendment to place this application in condition for allowance, based upon Applicant's understanding of allowable subject matter. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Response to Claim Rejections Under 35 U.S.C. § 102

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102.

Claims 1, 4-5, 7-9, 11, 12, 14-17, and 20 stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by Admitted Prior Art (APA). For at least the reasons set forth below, Applicant traverses these rejections.

A. Independent Claim 1

Applicants respectfully submits that independent claim 1 patently defines over APA for at least the reason that APA fails to disclose, teach, or suggest the features emphasized below in claim 1.

Claim 1, as amended, recites:

1. An apparatus for improving the management of received data packets of a host system that comprises a plurality of data buffers and a plurality of descriptors that corresponds to a subset of the plurality of data buffers to manage the received data packets, the apparatus comprising:
a receiver for receiving a data packet;
a first storage unit for storing the data packet from the receiver;
a counter for counting a number of descriptors in a first state to produce a count value;
a second storage unit for storing a threshold value;
a comparator for comparing the count value with the threshold value and producing a comparison signal; and
a masking circuit, for blocking an error signal which indicates the data packet is an error data packet until the count value reaches the threshold value;
wherein the apparatus issues a first event to the host system according to the comparison signal.

(Emphasis Added). Applicant thanks the Examiner for indicating that claim 19 contains allowable subject matter. (See Office Action, page 8). As set forth above, Applicant has incorporated the features of claim 19 into independent claim 1. Accordingly, Applicant respectfully request that claim 1 be placed in condition for allowance. Applicant submits that dependent claims 4, 5, 7-9, and 20 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

B. Independent Claim 11

Applicants respectfully submits that independent claim 11 patently defines over APA for at least the reason that APA fails to disclose, teach, or suggest the features emphasized below in claim 11.

Claim 11 recites:

11. A method for improving the management of received data packets of a host system that comprises a plurality of data

buffers and a plurality of descriptors that corresponds to a subset of the data buffers to manage the received data packets, the method comprising:

- receiving a data packet;
- transferring the data packet into at least one of the data buffers;
- counting an amount of the descriptors in a first state;
- comparing the amount with a threshold value to generate a comparison signal; and
- generating a first event to the host system according to the comparison signal to prevent all the descriptors from being in the first state.**

(Emphasis Added). Applicant has amended claim 11 to correct a minor typographical error. The Office Action continues to rely on *APA* (Applicant's admitted prior art) to reject claim 1. In fact, the present Office Action rejects claim 11 under 35 U.S.C. §102(a) and now alleges that *APA* anticipates claim 1. (Applicant notes that in the prior Office Action dated November 13, 2008, the Office Action rejected claim 11 and relied on a combination of *APA* and the secondary *Hayter* reference to reject claim 11.) Applicant respectfully traverses the rejection.

In alleging that *APA* discloses the feature of "generating a first event to the host system according to the comparison signal to prevent all the descriptors from being in the first state," the Office Action cites paragraph [0006] of the present application.

(See Office Action, page 6). Paragraph [0006] states the following:

The NIC issues an event signal to the host system to indicate what kind of data packet will be transferred into the data buffers. Data packets fall into one of two classes - ok packets and error packets - so naturally the NIC has two signals to represent the packets - an ok signal and an error signal. For example, if the NIC issues an ok signal, then the host system will post the data packet to the protocol stack and associate the descriptor corresponding to the data buffer used to store the data packet with a different data buffer that is in a free state. If the NIC issues an error signal, then the host system will clear the data buffer used to receive the transferred data packet

and renew the buffer length of the descriptor corresponding to the data buffer.

Based on the text passage above, the Office Action alleges that "issuing a signal to the host system based on the comparison signal" (as paraphrased in the Office Action) is equivalent to "generating a first event to the host system according to the comparison signal to prevent all the descriptors from being in the first state," as recited in claim 1. Applicant respectfully disagrees. While the background section of the present application discusses that "a prior art solution counts the number of times an event occurs and notifies the host system via a signal when the number of times an event occurs has reached a certain value" (paragraph [0008]), nowhere does *APA* disclose or suggest generating a first event to the host system according to the comparison signal to prevent all the descriptors from being in the first state. The background section asserts that the prior art solution referenced above is able to reduce the number of times the host system interrupts its operations and diverts its resources and power." In fact, the background section further points out that in the prior art solution, if the number of events counted that triggers the coalesced signal is too high, there is a danger that *all* the descriptors will be unavailable. With no free descriptors, the NIC will have not be able to obtain the address of a data buffer in a free state in the host system, resulting in the undesirable result of the host system dropping incoming data packets. In this regard, one of the perceived shortcomings of the prior art is described in the present application and involves the possibility that all the descriptors will be in a same state (*e.g.*, unavailable). In view of the foregoing, Applicant submits that *APA* fails to disclose each of the features in claim 11.

Accordingly, Applicant respectfully submits that independent claim 11 patently defines over APA. Moreover, Applicant submits that dependent claims 12 and 14-17 are allowable for at least the reason that these claims depend from an allowable independent claim. *Id.*

II. Response to Claim Rejections Under 35 U.S.C. § 103

The USPTO has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquiries, also expressed in MPEP §2141, are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

For a proper rejection of the claim under 35 U.S.C. §103, the cited combination of references must disclose, teach, or suggest all elements / features of the claim at issue. See, e.g., *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988) and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981). Claims 2, 3, 6, 10, 13, and 17-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of *Hayter et al.* (U.S. Patent No. 7,320,022 hereinafter "*Hayter*"). For at least the reasons set forth below, Applicant traverses the rejections set forth.

A. Independent Claim 18

Applicant respectfully submits that independent claim 18 patently defines over *APA* in view of *Hayter* for at least the reason that the combination fails to disclose, teach, or suggest the features emphasized below in claim 18.

Claim 18, as amended, recites:

18. A method for improving the management of data packets received from a network by a host system that comprises a plurality of data buffers and that utilizes a plurality of descriptors that corresponds to a subset of the plurality of data buffers to manage the data packets received from the network, the method comprising:

- receiving a data packet from the network;
- transferring the data packet into at least one of the data buffers;
- counting a number of descriptors that will have their state changed when the data packet is transferred;
- calculating a count value according to the number of descriptors that will have had their state changed by the data packet being transferred; and
- comparing the count value with a threshold value, and triggering a first event to the host system when the count value reaches the threshold value and based on whether a masking circuit is engaged;

wherein the first event notifies the host system to clear the data buffers corresponding to the descriptors, and wherein the masking circuit is engaged if the data packet is an error data packet.

(Emphasis added). In an effort to advance prosecution, Applicant has amended claim 18 to further specify that the step of comparing the count value with a threshold value, and triggering a first event is performed when the count value reaches the threshold value and based on whether a masking circuit is engaged. Claim 18, as amended, further recites that “the masking circuit is engaged if the data packet is an error data packet.” No new matter is added by the amendments. Applicant respectfully submits that neither *APA* nor *Hayter* discloses the features emphasized above. The *Hayter*

reference is directed to a system on a chip for caching of data packets based on a cache miss/hit and a state of a control signal. *Hayter* describes an interrupt mapper 28 coupled to provide interrupts to the processors 12A-12B and is further coupled to receive interrupt requests from the packet interface circuits 22A-22C. *Hayter* further specifies that "The interrupt mapper 28 may employ any mapping mechanism. In one embodiment, the interrupt mapper 28 may comprise a mask bit and a map register for each interrupt request and for each processor 12A-12B. The mask bit indicates whether or not the interrupt is masked to the particular processor 12A or 12B . . . Generally, if an interrupt request is received and is not masked, the interrupt mapper 28 asserts the interrupt signal to the processor 12A or 12B as specified in the map register." (Col. 7, line 59 to col. 8, line 4). However, while *Hayter* discloses use of a mapping mechanism, *Hayter* fails to disclose or suggest engaging a masking circuit based on whether the data packet is an error data packet. Further *APA* fails to address this deficiency.

Accordingly, Applicant respectfully submits that independent claim 18 patently defines over *APA* in view of *Hayter* for at least the reason that *APA* in view of *Hayter* fails to disclose, teach, or suggest the highlighted features in claim 18 above

B. Dependent Claims 2, 3, 6, 10, 13, and 17

Claims 2, 3, 6, 10, 13, and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *APA* in view of *Hayter*. As set forth above, Applicant submits that independent claims 1 and 11 are patentable over *APA*. Furthermore, *Hayter* fails to address the deficiencies expressed above for *APA*. As such, Applicant submits that independent claims 1 and 11 are patentable over the combination of *APA* in view of

Hayter. Accordingly, dependent claims 2, 3, 6, 10, 13, and 17 are allowable for at least the reason that these claims depend from an allowable independent claim.

CONCLUSION

Applicant respectfully submits that all pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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